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Implementation of Driver Medical Check-UpWeb-Based Application at Clinic PT. XYZ Indonesia

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Abstract*—The Clinic at PT XYZ Indonesia consistently implements Medical Check-Up for all workers, especially the drivers in charge ofpicking up employees. After carrying out the medical check-up driver process, the admin in managing and compiling patient data reports still uses a manual system. This causes delays in delivering information and reporting daily patient data. The purpose of this final project is to develop a web-based application that can make it easier for admin to carry out medical check-ups for drivers. This Final Project will be developed using the Rapid Application Development (RAD) method. Under these conditions, this web-based application for driver medical check-up will bedeveloped using PHP 7 and MySQL database. This web-based application driver medical check- up will be equipped with several features, there are login, dashboards, doctors, patients, rooms,blood pressure, view medical records anddownload reports from medical records.

Keyword: Web-Based Aplication, Medical Check-up, PHP, Mysql

I. INTRODUCTION

Conducting a Medical Check Up (MCU) on workers is an obligation for the company. The purpose of holding a Medical Check Up for all workers is to improve and maintain their physical, mental, and social health so they can work more efficiently and achieve high productivity. In addition, it can protect workers from harmful factors caused by disease transmission and diseasescaused by work or physical conditions that are not fit (vulnerable). According to the World Health Organization, workers' health is very important, mainly because it concerns the level of labor productivity. In this case, it is necessary to carry out a Medical Check Up (MCU) examination for each workforce to screen their health status and determine their level of productivity. Medical Check Up (MCU) is a positive activity and should be held continuously in seeking healthy and productive human resources as a company asset[1].

PT. XYZ Indonesia is a subsidiary of ABC, inc., established in 1992 in Indonesia. Fashion Doll and Die-Cast are the business fields of PT. XYZ Indonesia. The Clinic at PT XYZ Indonesia consistently implements Medical Check Up for all workers, especially the drivers in charge of picking up employees. The Medical Check Up process carried out by the Clinic includes an examination of Blood Pressure, Temperature and Heart Rate. Drivers' health checks are carried out two times a week, every Monday and Thursday, from 15.00 to 17.30. The aim is to monitor the drivers' health, ensure that the drivers are driving in good condition, and ensure that employees are safe whenboarding the bus or shuttle facilitated by PT. XYZ Indonesia.

After carrying out the medical check-up driver process, the admin in managing and compiling patient data reports still uses a manual system. This causes delays in delivering information and reporting daily patient data. By using this manual system, the admin in charge of recording the results of the medical check takes 5-10 minutes to write the results of the medical check-up. Efforts to improve Medical Check Up services, especially at the PT XYZ Indonesia clinic are urgently needed, therefore it is needed a computerized system to be able to improve services and can support the clinical activities of PT. XYZ Indonesia such as data processing and patient data reporting.

Based on the background above, the authors of this study aim to develop a web-based application that can make it easier for admin to carry out medical check-ups for drivers. The development of the current system is growing and taking advantage of technological trends. Therefore, it is necessary to make it user friendly to make it easier for admin or nurses to input all data. Under these conditions, this web-based driver medical check up will be developed using PHP 7 and MySQL database. This web-based application driver medical check up will be equipped with several features, there are

login, dashboards, doctors, patients, rooms, blood pressure, view medical records and downloadreports from medical records.

II. LITERATURE REVIEW

A. Medical Records

Medical record can be interpreted as a file that contains notes and documents regarding patient identity, examination, treatment, action, and other services provided to patients. Medical record data collection is carried out from the time the patient is admitted to leaving the hospital with all kinds of actions and treatment given [4].

B. Web-Based Application

The web-based application is a system containing a client-side application component that communicates with a web server-side application element to process data. The client-server architecture, request-response model, standard HTTP, and other related techniques and technologies are all used by web-basedapplications. Web applications are defined as a collection of pages that show different types of text information, data, still or moving images, animation data, sound, video, or a combination of all of them, both static and dynamic. These pages are connected by a network of pages or hyperlinks to form a collection of interconnected buildings. Programming languages like HTML, Javascript, CSS, and other well-known ones are used to create web-based applications [5].

C. PHP (*Hypertext Preprocessor)*

PHP is an acronym for Hypertext Preprocessor, which is a script-based programming language used to process data and send it return to the web browser into Hyper Text Markup code Language (HTML). This PHP discussion can describe several programming languages, such as C, Java, and Perl and easy to learn (Firman, 2019).

The server will work when there is an orderfrom clients. In this case, the client uses PHP code to send a request to the server [6].

D. MySQL

MySQL or My Structure Query Language is a database software, which is a relational data type which means MySQL data storage in the form of interconnected tables [7]. MySQL connects PHP scripts with the same query commands and escapes characters as PHP. MySQL is open source, so users don't have to pay to use it on various platforms except for enterprise types because it is commercial. MySQL is included in the Relation Database Management System (RDMS) type, so terms such as rows, columns, and tables are used in MySQL [6].

E. XAMPP

XAMPP is one of the installation packages Apache, PHP, and MySQL instantly can be used to assist the installation process these three products. XAMPP is a localhost media or web server that can be used offline. Through XAMPP, users canmanage databases that are on localhost without requiring internet access so that if the internet connection is interrupted and cannot access the webserver. As a web server-based open source software, XAMPP has various programs and supports various commonly used operating systems, such as Linux, Windows, MacOS, and Solaris [7].

F. Related Work

R. Syamsudin Hospital's Medical Record System This patient medical record management system was created using PHP and MySQL programming. This website was created to make it easier for doctors or admin to manage and store data related to patients seeking treatment at the hospital. This website has several features: login, patient medical records, add records, and add users.

III. SYSTEM ANALYSIS

The main purpose of this system is to manage, store data, and print automatically reports on the results of medical check-ups carried out by the clinic PT. XYZ Indonesia towards driver employees. Previously the PT. XYZ Indonesia clinic used a manual system, they writing the results of medical check-ups on paper, causing the paper results of medical check-ups to be messy and often lost. This system helps clinical employees of PT. XYZ Indonesia to facilitate data collection and data storage and save time in obtaining e-records for medical check-up results.

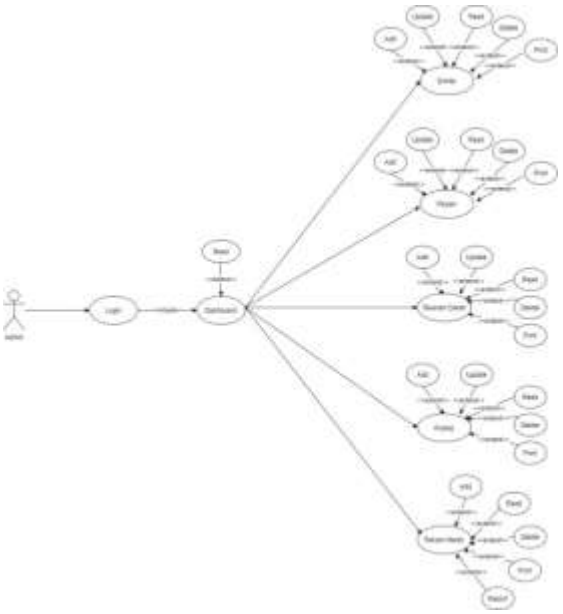

Figure 3. 1 Use case diagram

IV. SYSTEM DESIGN

The User Interface is the display of a product that bridges the system with the user or users, where the UI display can be in the form of colours, shapes and attractive writing on the application [8]. The user interface is when the system and users caninteract with each other through commands such as using content and entering data. The user interface can also be interpreted as a term used to describe the appearance of a machine or computer interacting directly with the user. The user interfaceis one of the most important parts of a computer system because the user interface relates to the userand can be seen, heard, and touched [9].

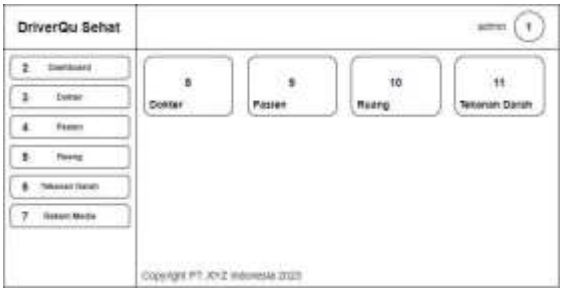

Figure 4. 1 Interface Design "Dashboard" Page

Based on Figure 4.1 above, it can be seen that the components of the web-based application on the dashboard page have 11 components. The web-based application name is "DriverQu Sehat". Several buttons are on the sidebar: the dashboard, doctor, patient, room, blood pressure and medical records. Then on Label 7, there is a profile of the user. And finally, there are 4 buttons, namely doctor, patient, room and blood pressure, where on these 4 buttons, we can see the amount of data from the 4 previous menus.

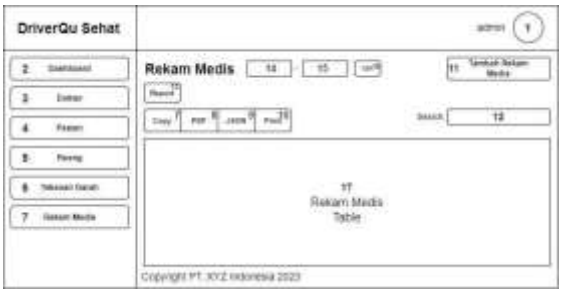

Figure 4. 2 Interface Design "Rekam Medis" Page

Based on Figure 4.2 above, it can be seen that the components of the web-based application on the dashboard page have 17 components. There are several buttons on the sidebar, namely the dashboard, doctor, patient, room, blood pressureand medical records. Then on Labels 7 to 10 are buttons for each function of downloading documents from medical records. On Label 12, there is a text input that functions to find data on the medical report's Table. On Label 14 and 15 is a date input and also on Label 13 there is a Report button to download today's medical report. Thenon Label 17, there is data from blood pressure,which will be displayed in the table.

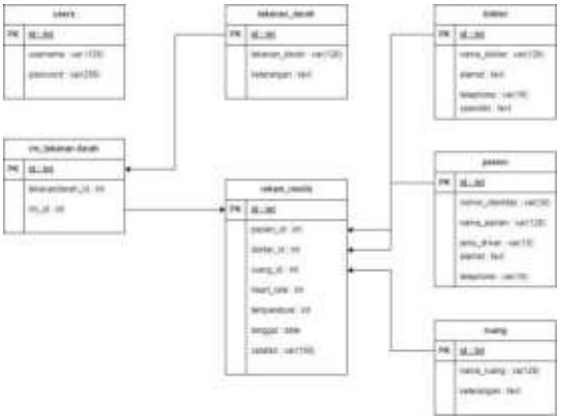

Figure 4. 3Entity Relationship Diagram

V. SYSTEM IMPLEMENTATION

The implementation of the user interfaces of the web-based application will be explained briefly in this chapter. There are several features of the user interface that is implemented in the web-based application that contains: Login, Dashboard,Doctor Page, Add Doctor, Patient Page, Add Patient, Room Page, Add Room, Blood Pressure

Page, Add Blood Pressure, Medical Records Page and Add Medical Records.

Figure 5. 1 User Interface of "Dashboard" Page

On the Dashboard in this application there is a Side Bar, Admin profile and on this dashboard we can see the amount of data held from each section such as: doctor, patient, room, blood pressure.

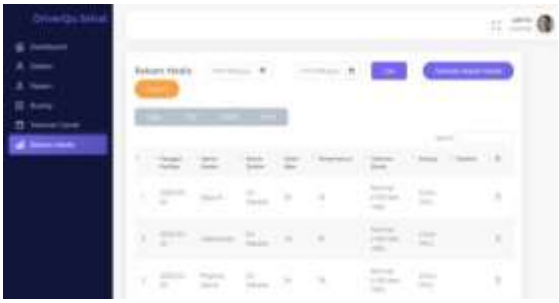

Figure 5. 2User Interface of "Rekam Medis" Page

On this page users can read and delete medical record data. There is a date range filter where the user can search for medical record data according to the desired date. Then there are 4 buttons above the doctor's table, namely Copy, PDF, JSON and Print where each button functions according to the name of the button. And there is a search bar to make it easier for users to find data in the table.And finally there is a "report" button where the usercan download the results report from the medical record.

This source code is where the dashboard can display the amount of data from doctors, patients, rooms, and types of blood pressure.

Figure 5. 3 Source Code "Dashboard" Page

VI. SYSTEM TESTING & EVALUATION

In every application system design, the last stage before being published to users must be checking or testing the software that is made. Software Testing is a method to determine whether the created software functions properly and correctly. With software testing, we can know whether the software meets the required criteria for the user [11]. There are several software testing methods, which will be used to test this application is Black Box Testing. Black Box Testing performs tests based on application details such as the appearance of the application, the functions thatexist in the application and the suitability of the function flow with the work system that the designer wants [11].

The tools needed to test the application are described in the testing environment. The tools used are based on their applicability to the testing scenarios or goals. The instruments that will beused to test the application are described below.

The Hardware Tools listed below will be utilized to test the application:

1. Laptop or Personal Computer.
2. Keyboard.
3. Wi-Fi

The Software Tools listed below will be utilized to test the application:

1. Google Chrome
2. Visual Studio Code
3. XAMPP

The testing scenarios describe various testing situations that will be used to evaluate the application. The testing scenarios will assess whether or not the application works and meets the user's expectations. Several sub-chapters below are the details for each testing scenario of the application.

No.	Testing Scenario	Expected Result	Actual Result
1.	Access the application using the url http://localhost/clinicmcu/	The Login page of the application is shown in the browser.	According to the expectation.
2.	Login using blank username and blank password	A warning message appears "Please fill out this field!"	According to the expectation
3.	Login using username : admin and password : password	The user redirects to the dashboard page	According to the expectation
4.	Access the "Dokter" Button	The doctor page displayed	According to the expectation
5.	Access the "Pasien" Button	The patient page displayed	According to the expectation
6.	Access the "Ruang" Button	The room page displayed	According to the expectation
7.	Access the "Tekanan Darah" Button	The blood pressure page displayed	According to the expectation
8.	Access the "Rekam Medis" Button	The medical records page displayed	According to the expectation
9.	Access the admin profile picture	The "Log out" button appear	According to the expectation

Table 6. 1 Testing Scenarios Login& Dashboard Page

VII. CONCLUSION & FUTURE WORKS

The goal of this final project is to help Clinic PT. XYZ Indonesia to improve the facilities provided by changing the previous manual method, which still uses paper to write medical check-ups, to use a web-based application system that can make it easier for clinic admins to organize data and reports from medical check-ups carried out. Then patient data becomes more organized, and this system can reduce paper use at the clinic PT. XYZ Indonesia. Overall, the system has met the expectations and objectives from the previous chapter. This user-friendly system makes it easier for admins to input and manage patient data, doctors, rooms, blood pressure and medical record reports. All data input through this system will be stored in a database, and this system can only be used using an internet connection.

Even though the system is functioning as expected, some things still need to be developed in future work. Namely, the system can be implemented as a mobile application so that the admin can access the system via mobile phone without needing to reopen the laptop. Also, patients and doctors can access it via mobile phones.

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